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REVIEWS.

THE POLYPS AND CORALS OF THE NORTH PACIFIC EXPLORING EXPEDITION.*—Professor Verrill here describes, with numerous figures by Dr. Stimpson, all the Polyps and Corals collected, with notes on their colors and appearance in life, by Dr. Stimpson, which are new to science. It is an important addition not only to our knowledge of the various forms of Polyps and Corals especially, but also to their geographical and bathymetrical distribution. An excellent summary of the class of "Cnidaria," or Polyps, precedes the account of new species. The class is divided into three orders (the Madreporaria, Actinaria, and Alcyonaria,) with short definitions of the suborders into which these three groups are divided. We reproduce two of the plates from the "Proceedings" of the Essex Institute, which represent some of the more interesting forms illustrating the different groups of Polyps of the suborder Pennatulacea. Fig. 1 represents a polyp of a sea pen, *Pteromorpha expansa* Verrill; Fig. 2, the animal of *Virgularia pusilla* V.; Fig. 3, of *Veretillum Stimpsonii* V.; Fig. 4 shows the whole colony of *Kophobelemnon clavatum* V., with the polyps, or single animals, protruding from the surface. These sea pens (so called from the resemblance, in the genus Pennatula, of the whole colony to a pen) move freely about in the mud or sand at the bottom of the sea. They belong to the most highly organized polyps, the order of Alcyonaria, in which the number of tentacles of each polyp is restricted to eight. All the above named sea pens are from Hong Kong.

Of the sea fans, or Gorgonacea, the second suborder of Alcyonaria, Verrill figures (5) the coral stock, and animal (5*a*) of *Muricea Sinensis* V.; 6, the coral stock, and 6*a* the animal of *Muricea divaricata* V.; and Fig. 7, the animal of an allied coral, *Acanthogorgia coccinea* V., of which 7*a* represents a top view, with the eight tentacles outspread. All three are from Hong Kong.

Of the soft Alcyoniums, called in England Dead Men's Fingers, which do not secret a coral, our author figures the animal of *Nepthya thyrsoidea* V. (Fig. 8, 8*a*, a polyp), from the Cape of Good Hope; *Anthella lineata* Stimps., Fig. 9; 9*a*, a polyp; 9*b*, one of the tentacles much enlarged, from Hong Kong; and *Telesto ramiculosa* V. (Fig. 10, polyp-colony; 10*a*, a polyp), from the same locality. An interesting sea Anemone, *Sagartia? paguri* V., was dredged in twenty to thirty fathoms, and said by Dr. Stimpson to be always parasitic on a hermit crab, *Diogenes Edwardsii* of Stimpson. Another form, *Cancrisocia expansa* Stimpson, Fig. 94,

"Is the only genus of Actinidæ, except Adamsia (*A. palliata*), in which a solid secretion is formed by the basal disk. In Cancrisocia it has a concentrically striate structure, the striæ being evidently lines of growth. The mode of formation seems to be this: The crab when very young, selects a very small fragment of shell or pebbles, which it holds upon its back by its posterior claws, as other species of Crabs (*Hypoconcha*) do, a valve of Pecten, or some other bivalve shell. Upon this small shelly, or stony fragment, the very young Cancrisocia finds a congenial abode; but soon growing too large for its station it enlarges its support by depositing a layer of horn-like material, secreted by the base, around its circumference, and this process is continually repeated, in proportion to its own growth, and that of the crab that carries it. In this way there is soon formed a broad thin pellicle, having its concentric elements arranged around a nucleus of stone or shell, which is usually excentric, the increase having been more rapid in front than behind. This basal secretion is held upon the back of Dorippe by its recurved posterior legs, in the same manner as the original bit of shell."

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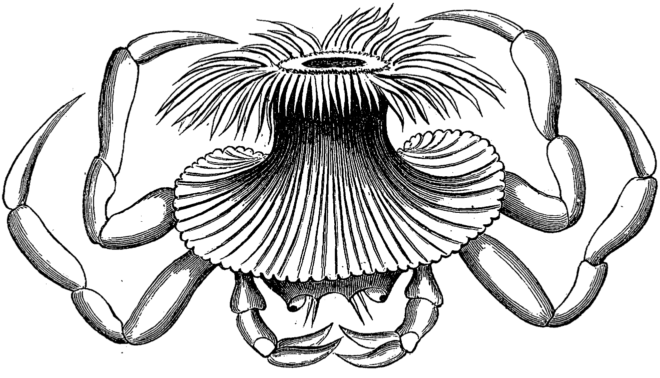
* Synopsis of the Polyps and Corals of the North Pacific Exploring Expedition, under Commodore C. Ringgold and Capt. John Rodgers, U. S. N., from 1853 to 1856. Collected by Dr. Wm. Stimpson, Naturalist to the Expedition. By A. E. Verrill. [From the Proceedings of the Essex Institute. Vols. 4-6. Salem, Mass. 1866-1869. 8vo, pp. With 6 plates.]

The division of Corals he raises to the rank of an order, under the term *Madreporaria*, thus making it parallel with the Alcyonaria. Among these corals numerous new forms are described and figured.

Fig. 94.



Cancrisocia expansa.

A number of species from various parts of the world are added in a supplement. The geographical list shows that most of the species are from the Seas of East India and China, the South Seas, Cape of Good Hope, and the West Coast of America.

Revue des Cours Scientifiques.* — This journal, now in its eighth year, is valuable as giving us reports of the lectures of prominent scientists in Europe, and occasionally our own country. Late numbers contain lectures by Marey on the flight of birds and insects; by Agassiz and Carpenter on deep sea dredgings; and lectures by Huxley, Claude Bernard, and the leading physicists and physiologists in France. It also contains a full report of the discussions in the recent sessions of the French Academy relative to the qualifications of Mr. Darwin to be elected a member of that body. Considering the bigotry and unscientific spirit, to say nothing of the surprisingly low grade of scientific acquirements displayed by some of the members, we should judge that if an opportunity should offer Mr. Darwin would decline the honor (*sic*) of membership.

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* Edited by MM. Eug. and Yung Em. Alglave. 15 francs a year. 4to, pp. 15. Weekly. Each volume about 900 pages. Germer Balliere, 17 Rue de l'Ecole-de-Medicine, Paris.

Fig. 1.

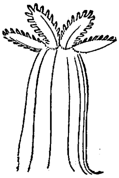


Fig. 6.

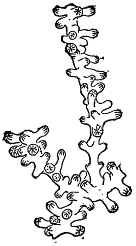


Fig. 5.

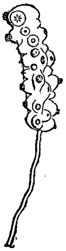


Fig. 2.

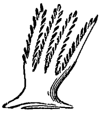


Fig. 6*a*.

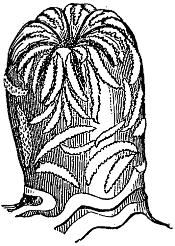


Fig. 5*a*.

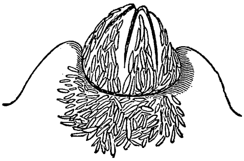


Fig. 7*a*.

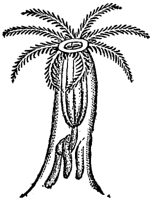


Fig. 3.

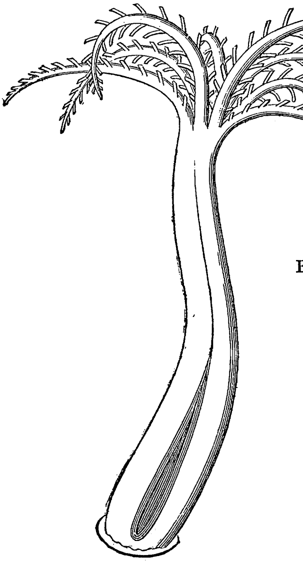


Fig. 4*a*.

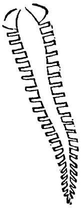
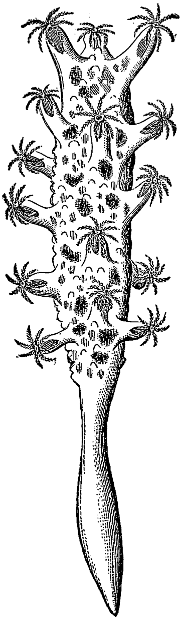


Fig. 4.



NORTH PACIFIC POLYPS AND CORALS.

Fig. 9*b*.

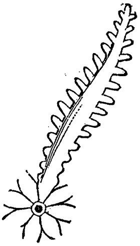


Fig. 8.

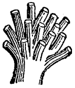


Fig. 7.

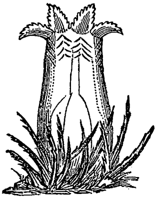


Fig. 7*a*.

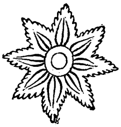


Fig. 9*a*.

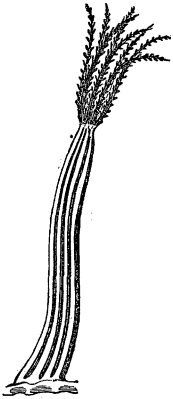


Fig. 8*a*.

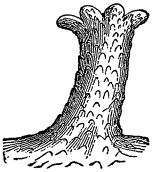


Fig. 10*a*.

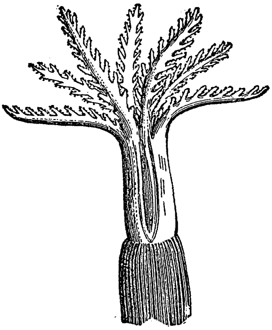


Fig. 10.

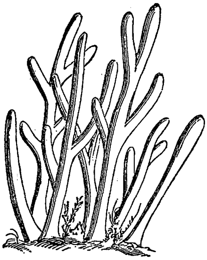
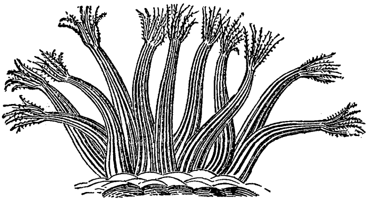


Fig. 9.



NORTH PACIFIC POLYPS AND CORALS.